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David Gibson
San Diego Water Board
2375 Northside Drive, Suite 100
San Diego, CA 92108.

Sent via email, Attention Joann Lim to SanDiego@waterboards.ca.gov

February 3, 2022

Re: Comment - Tentative Order No. R9-2022-0005

Dear Mr. Gibson,

Orange County Coastkeeper is an environmental organization with the mission to promote and restore water resources that are drinkable, swimmable, fishable, and sustainable. We have reviewed Tentative Order No. R9-2022-0005 and have the following comments related specifically to the Doheny Desalination Plant Water Code section 13142.5(b) analysis.

Orange County Coastkeeper appreciates the efforts of the San Diego Regional Water Quality Control Board to review the proposed Doheny Desalination plant in accordance with the California Ocean Plan requirements to utilize the best available site, design, technology, and mitigation measures to minimize intake and mortality of all forms of marine life. We have the following comments:

- **Need for the Water.** The draft permit uses only the South Coast Water District 2020 Urban Water Management Plan (UWMP) to document the need for water from the project. The use of this single document is insufficient. The UWMP only mentions the project n the context of a potential future project and does not include the project in calculations of future supplies (Doheny Seawater Desalination Project's projected water supplies are not included in the supply projections due to its current status within the criteria established by State guidelines (DWR, 2020c). Also, UWMPs are notoriously inaccurate in predicting future water use. The correct document to reference is the 2018 MWDOC Orange County Water Reliability Study (Reliability Study). This well researched study does go into the details of the potential future need for water in south Orange County and the role the Doheny Desalination project would play in filling that gap and ensuring system reliability. Most importantly both the UWMP and the MWDOC document the role that the desalination plant would play in an emergency. Unlike in north and central Orange County where the water supply is widely distributed over a huge aquifer, we recognize that south Orange County relies on imported water for 85% to 100% of its supply and has only sixteen days of water storage capacity. With that in mind, we support the proposed 5 MGD plant as a means to provide emergency backup water supplies. It is important that the board consider the most

accurate and detailed documents, and the context of need, instead of just a UWMP while permitting desalination plants.

- **Intake Analysis subsurface.** We appreciate the Regional Boards' decision to assume that subsurface intakes are feasible at all potential locations. This is the preference in the Ocean Plan and needs to be fully documented. The South Coast Water District, and other project proponents, conducted a proper subsurface feasibility analysis as required by the California Ocean Plan. In 2003/04, project proponents undertook preliminary studies to assess intake options including a conventional open intake, a subsurface infiltration gallery, and various types of beach wells. To investigate the feasibility of a subsurface slant well intake, a phased hydrogeology and subsurface well technology investigation was undertaken. In 2004/05, four exploratory boreholes were drilled along the beach to a depth of 188 feet below the ground surface. In 2005/06, after a thorough review of several technologies, it was determined that the most cost-effective approach for this location was the use of slant beach wells constructed with a dual rotary drill rig from the beach out under the ocean.

  The Doheny Project demonstrates that conventional pretreatment is not necessary for subsurface intakes. From the four exploratory boreholes, it was discovered that "… [t]he produced water showed a very low silt density index (average around 0.5 units) and turbidity (averaged around 0.1 NTU), indicating excellent filtration by the aquifer which eliminates the need for conventional pretreatment filtration and saves costs." Furthermore, "…the produced water showed no presence of bacterial indicator organisms which were found to be present in high concentrations in the ocean and seasonal lagoon," and that "[b]iofilm growths by the end of the test were found to be less than 10 μ in thickness, a level of no concern for biofouling." Pumped well water was run directly to the test RO units continuously for over four months. No fouling or performance deterioration was observed during the test or in the post-membrane autopsy as all the dissolved iron and manganese was easily removed as anoxic conditions were maintained throughout the test period.

  The Doheny study concluded that subsurface intakes do not need full conventional pretreatment – the natural filtration by the aquifer eliminates the need for conventional pretreatment filtration. The Doheny study further demonstrated that the use of subsurface intakes – and the avoidance of full pretreatment – resulted in significant cost savings, including $56 million in capital costs and $1 million annually in O&M costs. And finally, the Doheny study determined that the Doheny project using subsurface intakes would produce water for $600 per AF cheaper than that of the Poseidon-Huntington Beach open ocean intake proposal. The Doheny project proponents should be commended for properly analyzing subsurface intake options. They conducted physical test wells, which resulted in feasible subsurface intakes and reduced capital and operation costs – not to mention less impact on the environment.
  Importantly, subsurface intakes help maintain the connectivity of the statewide Marine Protected Area Network. The Doheny Desalination plant is located at the south end of a series of seven Marine Protected Areas in Orange County that are connected to a similar set of Marine Protected Areas in San Diego County through larval transport. Using subsurface intakes avoids disrupting this larval transport, unlike screened surface intakes that provide no entrainment protection for 99% of ocean life.
- **Outfall Analysis**. We agree with the Regional Board that the use of the existing outfall is the best choice for the project. This is the preference in the Ocean Plan as it eliminates construction impacts and results in a worst case brine mixing zone of 1 meter vs 100 meters approved for the Poseidon Huntington Beach project. However, we feel that the allowance of 5% non buoyant discharges over 6 months is too lenient. As stated in the staff report there has been only one day since 2016 that the discharge from the outfall was less than what would be required to create a buoyant plume. A 1% allowance for a non-buoyant plume annually should be sufficient.

- **Mitigation**. Mitigation is a critical component of any project and must be done with the goal of maximizing benefits to the local environment. We appreciate the Regional Board's decision to require before and after monitoring to document conditions and create the necessary data for an APF Re-Evaluation Study. We also support a specific larval study to determine the impact of the project on this very large and important component of the marine ecosystem. We do have concerns with the proposed mitigation project at the south Los Cerritos wetlands. The amount of mitigation required should be located within the Regional Boards service area. There are currently plans for a restoration of the Aliso Creek estuary, and the South Coast Water District owns property and has existing easements in the area. This seems like a much better idea for mitigation. Also, any mitigation approved should be permitted and constructed before the plant begins operation so that it is offsetting the impacts of the plant from the beginning of operations. Without this, the impacts of the plant will not be offset while it operates without functioning mitigation.

- **Climate Action Plan.** The draft permit gives SCWD three years to develop a climate action plan for the plant. This requirement should be left to the California Coastal Commission (CCC). The CCC has far more experience and expertise in climate change related issues including sea level rise, greenhouse gas emissions, and more than the Regional Board does. The requirement from the Regional Board for a Climate Action Plan may inadvertently restrict the CCC in its potential actions on this issue.
- **Public Access.** Public access is an important concern when considering any projects involving a public beach. The project map shows the location of a subsurface well pump station located in the camping area of Doheny State Beach. This is one of the most popular camping sites in California and there should be no reduction in the number of camping sites due to the project. Any camping sites displaced by the project need to be replaced onsite.

In closing Orange County Coastkeeper recognizes and appreciates the effort that Regional Board has put into this analysis and that the South Coast Water District has undertaken to design a desalination plant that meets the goals of the California Ocean Plan. We recognize that the proposed plant fills an important role for south Orange County in providing an emergency supply of water and hope the board considers our comments in its decision on a permit.

Respectfully,

Ray Hiemstra
Associate Director
Orange County Coastkeeper